

**Department of Materials Science and Engineering**  
**Suggested Program of Study**  
**Materials Science Engineering: 2019-2020**

**FIRST YEAR**

**Fall 12 hours**

CHM 2045C Chemistry Fundamentals I (Placement Exam)	4 hrs
MAC 2311C Calc. w/ Analytic Geometry I (MAC 1140C & MAC 114 or Placement Exam)	4 hrs
ENC 1101 English Composition I	3 hrs
EGS 1006C Intro to the Engineering Prof.	1 hrs

**Spring 16 hours**

CHM 2046C Chemistry Fundamentals II (CHM 2045C)	3 hrs
CHM 2046L Chemistry Fund. II Lab	1 hrs
MAC 2312 Calc. w/ Analytic Geometry II (MAC 2311)	4 hrs
ENC 1102 English Composition II (ENC 1101)	3 hrs
PHY 2048C Gen Physics Using Calculus I (MAC 2311C)	4 hrs
EGN 1007C Engr Concepts and Methods (EGS 1006C)	1 hr

**Summer 10 hours**

MAC 2313 Calc. w/ Analytic Geometry III (MAC 2312)	4 hrs
SPC 1603C Fund. of Tech. Presentations	3 hrs
ECO 2013 Principles of Macroeconomics	3 hrs

**SECOND YEAR**

**Fall 13 hours**

CHM 2210 Organic Chemistry I (CHM 2046)	3 hrs
PHY 2049C Gen. Physics Using Calculus II (MAC 2312, PHY 2048C)	4 hrs
EGN 3365 Structures and Prop. of Materials (CHM 2045C, MAC 2312)	3 hrs
EGN 3211 Engr Analysis and Computation (MAC 2312)	3 hrs

**Spring 15 hours**

MAP 2302 Ordinary Diff. Equations I (MAC 2313)	3 hrs
EMA 3012C Exp. Techniques in Materials I (EGN 3365)	3 hrs
EMA 3102 Thermodynamics of Materials (EGN 3365/EMA 3706, MAC 2313, PHY 2049C, MAP 2302)	3 hrs
EMA 3124 Design and Selection of Mats. (EGN 3365/EMA 3706)	3 hrs
EGN 3373 Principles of Electrical Engr. (PHY 2049, MAP2302)	3 hrs

**Summer 9 hours**

STA 3032 Prob. and Statistics for Engrs.	3 hrs
Social Foundation	3 hrs
Cultural/Historical Foundation B1/B2 Grp	3 hrs

**THIRD YEAR**

**Fall 12 hours**

EMA 3000 Introduction to Polymeric Mats. (EMA 3102, CHM 2210)	3 hrs
EMA 4513 Structures of Materials (EGN 3365/ EMA 3706)	3 hrs
EMA 4223 Fund. of Mech. Behav. of Mats. (EGN 3365/ EMA 3706)	3 hrs
EMA 4307 Kinetics of Materials (EMA 3102)	3 hrs

**Spring 12 hours**

EMA 4115 Transport Phenomena in Mats. (EMA 4307)	3 hrs
EMA 4125 Phase Transformations and Microstructural Development in Materials (EGN 3365, EMA 3000, EMA 4513)	3 hrs
EMA 4013C Exp. Techniques in Mats. II (EMA 3012C, EMA 4223)	3 hrs
<u>Select 1:</u>	
CHM 2211 Organic Chemistry II (CHM 2210)	3 hrs
PHY 3101 Gen Physics Using Calculus III (MAC 2313, PHY 2049C or PHY 2045)	3 hrs
EGN 3310 Engineering Analysis- Statics (MAC 2311C, PHY 2048C, MAC2312)	3 hrs

**FOURTH YEAR**

**Fall 15 hours**

EMA 4915 Materials Senior Design I (EMA 4115, EMA 4013C , EMA 4125)	3 hrs
EMA 4602C Materials Processing Lab (EMA 3012C, EMA 3124)	3 hrs
EMA 4413 Fund. of Electronic Materials (EGN 3365, EGN 3373)	3 hrs
Technical Elective	3 hrs
Technical Elective	3 hrs

**Spring 14 hours**

EMA 4916 Materials Senior Design II (EMA 4915)	3 hrs
EMA 4009 Materials in Society (EMA 3365, EMA 3000, EMA 4513)	2 hrs
Science Foundation E2 Group	3 hrs
Cultural Foundation B2 Group	3 hrs
Historical Foundation B1 Group	3 hrs